E

Appendix E – Summary of Comments Received Regarding the Draft EIS

Introduction

The applicants, several parties to this docket, the DNR, the NPS and over 150 individuals provided written comments regarding the draft EIS. Many members of the public also provided oral comments regarding the draft EIS to Commission staff during the public information meetings conducted at Abbotsford, Solon Springs, Ladysmith, and Tomahawk during June 2000. The comments from the applicants, parties, government organizations, and the public generally provided substantive information, criticism, or questions regarding Commission policies and recommendations regarding the content and format of the draft EIS. All written comments postmarked by July 5, 2000, and the information obtained during public information meetings were considered in the development of this final EIS.

Due to the volume of written comments received and costs of reproduction, the written comments have not been reproduced within the final EIS. However, in order to provide the reader with a general description of the topics discussed in the comments received, the following pages summarize some of the parties' and government agencies' comments. Following the summary of topics is a narrative description of modifications that have been made to address the comments.

Applicants, Parties, and Government Agencies

Wisconsin Public Service Corporation (WPSC) and Minnesota Power (MP) (applicants)

The applicants' comments on the draft EIS included 51 pages of line-by-line and chapter-by-chapter comments, corrections of perceived or real inaccuracies or mistaken information, suggestions for augmentation of existing text, and rebuttal information. Several of the major issues and concerns raised by the applicants are discussed below.

The applicants' recommended that the final EIS further address the issue of geographic diversity in relation to maintaining the security and reliability of the regional transmission system. The applicants believe a major transmission line project that places a new line in close proximity to another major line could subject a system to common cause outages due to the same weather or equipment related failures.

The applicants indicated that the final EIS needed more references or citations to sources of information used by Commission staff in order to allow the reader to understand how conclusions or observations in the draft EIS were reached.

The applicants' comments suggested that the final EIS include a discussion of the potential for common-mode interruptions in power supply from multiple fossil fuel units, similar to the discussion in the draft EIS regarding common-mode interruptions at nuclear power plants.

The applicants' comments seemed to question the role of energy efficiency (a.k.a. conservation or DSM) as an alternative to utility projects in light of the reduced role utilities have in the provision of energy efficiency as a result of the legislation in 1999 Wisconsin Act 9. The applicants also contend that the ability of energy efficiency to offset all or a part of the stated need for the Arrowhead-Weston project is uncertain. The applicants also contend that the inclusion of energy efficiency measures within an integrated package of alternatives would cost ratepayers more than the proposed line.

The applicants commented that, as a result of the elimination of the Advance Plan in 1997 Wis. Act 204, Wisconsin no longer requires a system level environmental review of transmission alternatives. In addition, the applicants state that the WRAO, within the WIRE study, did conduct an environmental review of all the viable transmission alternatives prior to reaching a recommendation that the Arrowhead-Weston transmission project be built.

The applicants also commented on the analysis of forest fragmentation impacts presented in the draft EIS. Within their comments the applicants indicated that most of the large unbroken tracts of forest within the project area are owned by paper companies or are county forest holdings, and are "continuously being logged." The comments also indicate that existing corridors are already a significant part of the proposed arrowhead-Weston Transmission Project landscape and therefore the forests are not necessarily contiguous stands of mature trees.

WPSC and MP commented that the draft EIS did not address the social impacts in the system-level analysis of the human environment.

Related modifications to the EIS

- Chapter 3 (formerly Chapter 4) includes a significantly expanded discussion of geographic diversity. The analysis presented is based on data supplied by various Wisconsin utilities regarding causes of outages of the existing transmission system in Wisconsin.
- Throughout the EIS, additional references and citations to the sources of information relied upon by Commission staff have been identified.
- Chapter 2 contains new discussion of the potential for common-mode outages in non-nuclear (i.e. coal plants) generating plants.
- Chapter 4 (formerly Chapter 3) includes an expanded discussion of recent changes in the regulation and provision of energy efficiency programs within Wisconsin.
- Chapter 3 includes expanded, but still general, discussion of social impacts of the proposed project. Additional information regarding socioeconomic impacts of transmission line projects in general is provided in Chapter 5. This additional information includes an expanded discussion of agricultural impacts, and impacts on property value, aesthetics, and EMF.
- Chapter 5 includes new discussion of public and private forest management practices and policies. Chapter 5 also provides an expanded discussion of forest fragmentation, particularly directed toward forest blocks less than 1,000 acres (i.e. blocks greater than 200 acres but less than 1,000 acres). Chapters 7, 8, 9, and 11 include information discussing locations and quantities of smaller forest blocks that may be impacted by the proposed routes.

Save Our Unique Lands (SOUL)

SOUL's comments criticized Commission staff's use of a "system-level" environmental review for its analysis of the transmission system alternatives to the proposed project. SOUL's assertion is that the system-level review results in the draft EIS being inadequate to meet the requirements of the Wisconsin Environmental Protection Act (WEPA). Other issues in the system-level review, identified by SOUL, include the lack of more site-specific impact information for each of the system alternatives, and the lack of a discussion of reasonable alternatives or a preferred alternative to the proposed action.

Additionally, SOUL suggests that the draft EIS was deficient with regard to providing sound scientific information, with appropriate scientific citations, that would lead the general public to an understanding of how conclusions were reached.

Other comment items included: concerns about the confusing format of the text and the maps within the draft EIS; the absence of a listing the preparers' qualifications; insufficient discussion regarding EMF; incomplete discussion of ecosystem and forest fragmentation; and the need for more discussion of threatened and endangered species, i.e. lynx.

Related modifications to the EIS

- The discussion of the environmental analysis of EHV transmission system alternatives to the Arrowhead-Weston line project continues to be based on the system-level review used in the draft EIS. The discussion of this analysis in Chapter 3 (formerly Chapter 4) provides additional discussion of the differences between a system-level analysis and the route-level analysis performed for the proposed project.
- Throughout the document, additional references to sources of information used in the analyses have been made to allow the reader a better opportunity to understand how the analyses were completed and how observations or conclusions were reached.
- Significant changes to formatting of the EIS have been made. Some of the more obvious changes include: Chapters 3 and 4 from the draft EIS were switched in this final EIS to provide a more natural progression of the topic discussions. The Table of Contents, the List of Tables, and the List of Figures in Volume 1 have been revamped entirely to be more understandable and useful. Each page of the text now includes a footer that identifies the chapter.
- The new Chapter 4 (formerly Chapter 3) includes updated discussion about power plant proposals that have been publicly announced, including general information about potential locations for those facilities.
- The discussion of EMF in Chapter 5 has been modified significantly. In particular, the discussion in Chapter 5 now serves primarily as an introduction to an expanded discussion of EMF that is provided in Appendix D.
- Chapter 5 includes an expanded discussion of forest fragmentation, as well as an expanded discussion of impacts of transmission lines on endangered or threatened wildlife. Chapters 7, 8, 9 and 11 all include expanded analysis of forest fragmentation within the various sectors of the proposed project, as well as additional information about endangered or threatened species within the various route sectors of the proposed project.

Wisconsin's Environmental Decade's (WED)

WED's comments targeted a perceived weakness in the analyses and discussion of alternatives to the proposed project, including the "no action" alternative. WED describes the analysis of alternatives as the "heart" of an EIS.

Additionally, WED suggests that the EIS needs more discussion of the socioeconomic effects of the proposal and an expanded discussion of the project economics (i.e. the need for more electric capacity and purchased power relative to retail and wholesale sales).

Related Modifications to the EIS

- The new Chapter 4 (formerly Chapter 3) clarifies the definition and potential impacts of the "no action" alternative.
- Chapter 4 includes additional information regarding generation alternatives to the proposed project, including distributed generation technologies, and announced plans for new large-scale generation.
- Chapter 2 has been updated for more recent information regarding forecasted demand for electricity.
- Chapter 4 provides additional information about the availability of generation capacity to the north and west of Wisconsin.
- Chapter 4 contains a new section on analysis of an integrated alternative to the proposed project.

Comments of Joint Intervenors:320

Joint Intervenors' comments identify two significant concerns with the draft EIS. The first concern relates to a statement in the draft EIS that environmental impacts from generation construction "appear to be significantly less" than those associated with construction of the Arrowhead-Weston line. The Joint Intervenors believe that the information presented in the draft EIS underestimates the number of generation plants needed to satisfy future demand for electricity and that relying upon additional generation would cause more significant environmental impacts than a single transmission line.

The second concern is an apparent lack of discussion of impacts on the human and socioeconomic environment if the project is not built. The Joint Intervenors asserted that the draft EIS provided insufficient discussion of the human and socioeconomic environmental impacts of not constructing the A-W line, such as small business impacts and the health and safety of individuals and communities.

Related modifications to the EIS

- The new Chapter 4 (formerly Chapter 3) includes updated discussion about power plant proposals that have been publicly announced, including general information about potential locations for the facilities. Chapter 4 also includes additional analysis of environmental impacts of generation.
- The analysis of "need" in Chapter 2 has been revised to reflect more recent information regarding the forecasted demand for electricity. The LOLE analysis has

[320] Joint Intervenors includes: the Municipal Electric Utilities of Wisconsin, the Wisconsin Alliance of Cities, the Wisconsin Federation of Cooperatives, the Wisconsin Grocers Association, the Wisconsin Industrial Energy Group, the Wisconsin Manufacturers and Commerce, the Wisconsin Merchants Federation, and Wisconsin Public Power, Inc.

been reviewed and revised to analyze issues such as common-mode outages at non-nuclear generation facilities and includes a new discussion of transmission system alternatives to those identified in the draft EIS.

- Chapter 3 includes an expanded discussion on the potential social impacts of constructing transmission lines and generation.

Citizens' Utility Board (CUB)

CUB's comments focused on economic issues that it believes deserve additional analyses and discussion in the final EIS. In particular, CUB recommended more analysis of: the status and importance of the Southern Interface; the impact of proposed new supply sources on the need and ability to import electricity; the relationship between statewide and regional reliability and retail and wholesale demand; and market factors such as market power, alternative methods of meeting electric demand, including market-based tariffs, and peak load pricing.

CUB recommended that the final EIS include a more complete discussion of the "no action" alternative that identifies why it is not a viable option or under what circumstances it may be a viable option.

CUB also commented that the final EIS should include an analysis of an integrated package of generation additions, some transmission improvements and energy efficiency measures as a possible alternative to the proposed project.

Related modifications to the EIS

- The analyses in Chapter 2 regarding "need" have been updated to reflect the current status of transmission improvements to the south of Wisconsin that impact the Southern Interface.
- The new Chapter 4 (formerly Chapter 3) includes updated information about announced proposals for new generation within the state, as well as a discussion regarding the availability of generation capacity to the north and west of Wisconsin.
- As indicated previously, Chapter 4 clarifies the "no action" alternative.
- Chapter 4 also discusses the potential for an integrated package of generation, transmission, efficiency and pricing measures to serve as an alternative to the proposed project. This discussion centers on a new analysis of the degree to which transmission transfer capability could be improved through lower voltage transmission reinforcement projects.

Wisconsin Paper Council (WPC)

WPC recommended the addition of more socioeconomic data and analysis that measures the impact of the "No Action" alternative.

Related modifications to the EIS

- As indicated previously, Chapter 4 expands the discussion of the "no action" alternative.
- Chapter 3 includes an expanded discussion on the potential social impacts of constructing transmission lines and generation.

Northern States Power-Wisconsin (NSPW)

NSPW identified numerous problems with inconsistency or inaccuracy of information presented in the draft EIS, as well as the format of the draft EIS.

NSPW believes the draft EIS included inadequate discussion of impacts of the project on existing NSP facilities and rights-of-way.

NSPW recommended that the final EIS include more information on the potential implications of the Arrowhead-Weston project on the electric system in northwest Wisconsin.

Related Modifications to the EIS

- As stated previously, significant changes to formatting of the EIS have been made. Some of the more obvious changes include: Chapters 3 and 4 from the draft EIS were switched in this final EIS to provide a more natural progression of the topic discussions. The Table of Contents, the List of Tables, and the List of Figures in Volume 1 have been revamped entirely to be more understandable and useful. Each page of the text now includes a footer that identifies the chapter.
- Chapters 7, 8, and 9 include additional information to identify NSPW facilities and ROW that may be impacted by the proposed project.
- New information regarding future implications of the Arrowhead-Weston project on the electric system in northwest Wisconsin has been added to Chapter 3.

World Organization for Landowners Freedom (WOLF)

Comments from WOLF were both general and specific in nature and focus on identifying what it feels is the need for more detailed information (i.e. more detailed maps so that real impacts to wetlands, forest and agricultural can be more readily determined.)

WOLF went into greater detail in their comments using a chapter-by-chapter listing of perceived inadequacies in the draft EIS and what information could possibly make the final EIS more comprehensive, up to and including repeating the review process in its entirety.

Related modification to the EIS

- The maps illustrating all of the possible routes (Owen, Oliver, Tripoli, and Rhinelander sectors) were re-done using greater detail and GIS coverage to enable

interested parties and citizens to scrutinize individual locations/impacted areas. These maps will be available at local libraries in the project area for public review.

- Part C - Summary of Significant Changes to EIS, provided near the front of the EIS contains a review of chapter-by-chapter changes and inclusions of more detailed information.

Concerned Northwoods Citizens (CNC)

Comments from the CNC are based on the absence of detailed site-specific natural resource inventories along the proposed and alternative routes for the Arrowhead-Weston line, including: inventories of existing forest ground cover, existing natural woodland and wetland composition, and endangered and threatened wildlife species.

CNC also criticized the maps in the draft EIS, indicating that they prevented the reader from determining the exact location of the alternative transmission line routes.

Additional comments recommended the inclusion of more detailed discussion of aesthetic and noise impacts form the proposed transmission line and the presence (or possible presence) of archaeological sites along the way.

Related modifications to the EIS

- New discussion on forest and wetland construction impacts can be referenced in Chapters 5 and 6. These discussions do not include references to site surveys. They do include a comprehensive discussion (along with scientific citations) of the impacts that could be anticipated as a result of the project, and more information about the permitting processes of the DNR and the COE.
- Chapters 7, 8, and 9 include route-specific information regarding threatened or endangered wildlife species, which could be impacted by the project.
- Chapter 6 also discusses measures that may be taken to protect archeological sites during construction.
- Chapter 6 six includes revised discussion regarding noise impacts that could result if the transmission line project is constructed.

Gerald and Linda Ceylor

The Ceylor's comments focus on the rational for the need of the Arrowhead-Weston Transmission Project project. Among the more specific comments is the issue of peak demand as a driver for the project. The Ceylor's position is that the line is being built for peak demand and that this need can be addressed by using locally (Wisconsin) built generation sources. Further comments address cost effectiveness of the project and further exploring the use of merchant plants and studies of alternative/conservative energy sources.

Additionally, the Ceylor's commented on the environmental review and the absence of site-specific resource impacts from the arrowhead-Weston project.

Related modifications to the EIS

- Chapters 2, 3, and 4 include updated and new discussion of current reliability issues in Wisconsin, expanded discussion of the WIRE study and comparisons of generation alternatives to the Arrowhead-Weston line, respectively. Chapter 4 also includes discussion of the potential for already planned transmission system improvements to meet the future demand for electricity in Wisconsin.
- Chapters 5 and 6 include new and updated specific discussion of environmental impacts such as forest fragmentation and wetland impacts. Chapters 7, 8, and 9 include additional route-specific impact information.

Ryan Berg

Mr. Berg's comments specifically addressed impacts to Timm's Hill and his family's maple sugar business from the Arrowhead-Weston Transmission Project Project. A detailed analysis of Timm's Hill was absent from the draft EIS. In addition Mr. Berg expressed concerns about the undisclosed value to the applicants of using fiber optic cables on the proposed line

Related Modifications to the EIS

- Chapter 8 contains a new discussion of Timm's Hill.
- Chapter 5 contains a new discussion of potential impacts to a sugar bush operation from an overhead transmission line.
- Chapter 6 includes an expanded discussion of the fiber optic system proposed by the applicants, for use as a shield wire and as a communications system to control and monitor power flows on the line.

National Park Service (NPS)

Comments from the NPS stem from one or more of the alternate transmission line routes and/or transmission system option study areas crossing a National Scenic Riverway (NSR), National Scenic Trail (NST), or a river listed on the Nationwide Rivers Inventory (NRI).

In terms of the NSR, the NPS's management policy is to "protect and enhance" the values of the NSR. The NPS refutes the characterization in the draft EIS of aesthetic qualities in certain areas as marginal due to existing development. It is the position of the NPS that mitigation measures are ongoing in these areas and the presence of development should not necessarily encourage other actions that further degrade the resource.

The NPS feels that the final EIS needs to have a more in-depth discussion or definition of "reasonable need" and "adequate supply" of power. The NPS suggests the final EIS include a more thorough investigation of all system level options to the proposed project.

Other comments include detailed discussion of each scenic area type and possible impacts, invasive or unacceptable construction practices within these areas, and legal citations that govern development on federally managed lands and resources.

Related modifications to the EIS

- Chapter 3 (formerly chapter 4) has been modified to remove language found objectionable by the NPS.
- Chapter 6 provides an expanded discussion of the role of the NPS and other federal agencies in the review of the proposed project. In addition, Chapter 6 provides additional information regarding restrictions or conditions for development on federally managed lands and resources.
- Chapter 7 includes information regarding additional alternatives for a transmission line crossing of the Namekagon River. Volume 2 provides photo simulations for these additional alternatives and provides a photo simulation of an overhead-to-underground transition station for the underground river crossing option.
- As stated previously, Chapter 2 has been updated to reflect more recent information regarding forecasted demand for electricity in Wisconsin, and the region, as well as updated information regarding utilities' plans to meet the demand for electricity.
- The new Chapter 4 (formerly Chapter 3) includes updated discussion about power plant proposals that have been publicly announced, including general information about potential locations for the facilities.
- Chapter 6 includes additional information regarding the anticipated construction techniques that would be used, as well as mitigation measures that may be used. Volume 2 includes numerous photographs of different construction techniques and mitigation measures that were used during the construction of a transmission line in the Upper Peninsula of Michigan.

Wisconsin Department of Natural Resources (DNR)

The predominant concern of the DNR is that a high voltage transmission line in northern Wisconsin will include impacts from forest fragmentation, wetland and stream crossings, impacts to recreation, and impacts to habitat for rare, endangered and threatened species.

DNR also indicated a concern regarding the mixing of system level planning analyses and project specific siting analyses within the same proceedings.

The DNR's comments question whether the applicant, and the Commission staff's analysis, has established a need for thearrowhead-Weston project due to the fact that the system level analysis does not adequately evaluate different combinations of power supply alternatives.

Related modifications to the EIS

- Chapter 5 provides an expanded discussion of the impacts of constructing a transmission line through large blocks of forest (forest fragmentation). In addition, chapters 6, 7, 8, 9, and 11 all include expanded discussion of forest fragmentation as it relates specifically to the proposed project. This expanded discussion includes a review of forest fragmentation for smaller blocks of forest than had been analyzed for the draft EIS.
- As indicated previously, the analyses of "need" in Chapter 2 has been revised to reflect more recent information.
- The new Chapter 4 (formerly Chapter 3) provides expanded analyses of generation alternatives to the proposed project, including discussion of announced plans for generation plants, and updated analysis of distributed generation technologies. Chapter 4 also includes a discussion of the impact of other planned transmission system improvements by the utilities and the impact of those improvements on the ability to import electricity into Wisconsin.

Summary Of Comments From The Public

In order to provide an indication of the issues discussed in the numerous comments from the public, Commission staff developed several "topic categories." Commission staff recognizes these topic categories are very general and parceling these comments into general categories is in no way intended to minimize the importance of the comments received. Following the explanation of each topic category is a narrative description of the modifications that were made to the EIS to address the comments from the public. At the end of the discussion ofthe topic categories is a listing of the individuals that submitted comments. The listing identifies which topics their comments addressed.

Topic categories

Aesthetic/Tourism Impact: Comments regarding the visual impact of the proposed transmission lines on the surrounding area. Comments about concerns that the visual or general environmental impact will deter tourism in the project area, particularly near the proposed transmission lines.

- Volume 2 of the EIS now includes two additional photo-simulations of potential transmission line configurations for the identified transmission line crossing of the Namekagon River. The narrative description of the additional potential transmission line configuration is provided in Chapter 7.
- Volume 2 also includes a photo simulation of a transition station as an example of one of the alternatives for transitioning between overhead transmission lines to underground lines at the crossing of the Namekagon River. Other alternatives to the

transition station are possible. The narrative descriptions of the different transition options are included in Chapter 7.

- Chapter 5 provides additional information regarding studies of human perception of aesthetic impacts of the transmission lines, primarily related to the impact on property values.
- To the extent that comments identified specific locations of concern related to aesthetic and tourism impacts on tourism, Chapters 7, 8, 9 and 11 have attempted to include additional information about these locations.

Conservation/Demand Side Management: Comments suggesting further examination of the potential for conservation and demand side management to reduce or eliminate the need for the proposed project.

- The new Chapter 4 (formerly Chapter 3) includes an expanded discussion of recent changes in conservation and demand-side management within Wisconsin and the impact of those changes on the ability of conservation and demand-side management to reduce demand for electricity in Wisconsin.

Deregulation/American Transmission Company: Comments discussing concern that deregulation of the electric industry is the driver for the applicants desire to build the proposed transmission line, rather than electric reliability. Comments questioning the impact of the proposed Transco on the operation, maintenance and need for the proposed project.

- Chapter 2 provides a new section regarding information about the proposed formation of American Transmission Company (ATCo) and an explanation of potential impacts of the formation of ATCo on the governance, operation, control and rate impacts of the proposed projects.
- Chapter 2 also includes an expanded discussion about the developing Midwest Independent System Operator (MISO), and the potential impacts of MISO on the ultimate owner of the proposed transmission lines, whether it is the applicants or theATCo.
- **Eminent Domain / Property Rights / Local Zoning**: Comments regarding the current eminent domain statutes and processes, including issues such as fairness of compensation, and the appropriateness of eminent domain for private industrial purposes. Comments regarding landowners' rights along the ROW, including ability to restrict trespassing. Comments regarding the compatibility of the proposed transmission line with local zoning or land use patterns.
- Within Chapters 7, 8, 9, and 11, additional information regarding local zoning regulations has been inserted when available.
- Chapter 5 provides additional information regarding landowner programs such as the Conservation Reserve Program and the Wetland Reserve Program.

- Chapter 5 includes additional information regarding landowners' rights with references to state statutes.

Endangered/Threatened Resources: Comments describing general locations of endangered or threatened plant and animal resources along the proposed routes. General comments regarding concern that the proposed routes will negatively impact endangered or threatened plant and animal resources.

- Chapter 5 includes additional information regarding potential impacts of the transmission line project on wolves.
- Chapter 7 also provides information regarding impacts to lynx and efforts taken by the Wisconsin Department of Transportation to mitigate impacts of highway construction on wolves.

Forest Impacts: Comments regarding forest fragmentation, permanent loss of mature timber and increased potential for encroachment of edge species.

- Chapter 5 includes new discussion of public and private forest management practices and policies.
- Chapter 6 also provides an expanded discussion of forest fragmentation, particularly directed toward forest blocks less than 1,000 acres (i.e. blocks greater than 200 acres but less than 1,000 acres).
- Chapters 7, 8, 9, and 11 include information discussing locations and quantities of smaller forest blocks that may be impacted by the proposed routes.

Generation Alternatives: Comments regarding construction of additional central station generation capacity (i.e. combustion turbines, combined cycle units, baseload coal) near load centers rather than constructing the proposed project or another high-voltage transmission line. Comments regarding potential for increased reliance upon distributed generation resources (i.e. fuel cells, micro turbines) to reduce or eliminate the need for the proposed project.

- Chapter 4 includes an updated discussion about power plant proposals that have been publicly announced, including general information about potential locations for the facilities. Updated information has been incorporated into the cost comparison analysis between the Arrowhead-Weston Transmission Project and generation alternatives. In addition, sensitivity analyses related to the cost comparison analyses have been provided.

Generation Outside of Wisconsin: Comments regarding the environmental impact of increased air emissions from generation sources to the north and west of Wisconsin. Comments regarding the environmental and social impact of increased reliance on hydroelectric generation facilities located in Canada.

- The new Chapter 4 (formerly Chapter 3) includes a new discussion regarding the current and projected status and expected availability of generation capacity north and west of Wisconsin.
- Chapter 3 provides a discussion of the potential for changes in generation patterns in facilities north and west of Wisconsin that could occur as a result of constructing the proposed project..

Historic Sites/Proximity to Schools/Route Recommendations: Comments about the potential impact on specific historically significant sites along the proposed routes. Comments regarding the locations of certain route segments in relation to school facilities. Comments providing specific information or recommendations related to specific route segments.

- Chapters 7, 8, 9, and 11 include more specific information regarding the local environment near the various alternative routes, including more specific information regarding the wetlands and blocks of forest crossed. Information regarding historic sites and proximity to residences, schools and other buildings has been reviewed and corrected or updated to reflect information provided by the public.
- Chapters 8, 9 and 12 include discussion of two new routes (Tripoli 4 and Owen 4) for the portion of the 345 kV transmission line project between Ladysmith and Wausau. The new route options result from new combinations of previously identified route segments *(the new route options do not involve new route segments)*. The primary purpose of the two new routes is intended to provide the Commissioners additional options for consideration, with particular emphasis on reduction of potential impacts on Outstanding and Exceptional Resource Waters (OERW) and reduction of impacts on the Nine Mile County Forest, near Mosinee, Wisconsin.

EMF and Other Human Health Issues: Comments regarding concerns about the physiological impact of the proposed project on human health related to electric fields, magnetic fields, ground currents, and stray voltage.

- The discussion of EMF in Chapter 5 has been modified significantly. In general, most of the discussion of EMF has moved to Appendix D. The new appendix includes significantly more information regarding updated studies of EMF, concerns about EMF and pacemakers, and concerns about EMF and radon This appendix also provides references to other sources of information.

Impact on Agriculture/Business Operations: Comments regarding potential physical interference with agricultural operations. Examples include, interference of pole structures on fieldwork, interference with rotational grazing practices, and additional safety precautions necessary when working in proximity to the electric transmission line. Comments regarding potential interference with other business operations (i.e. commercial timber production, fish farms, and game farms).

- Chapter 5 provides an expanded discussion of the construction and long-term impacts of building an electric transmission line through agricultural land.
- Chapter 5 includes an expanded discussion of stray voltage. In particular the expanded discussion addresses the relationship between transmission lines and distribution lines and the occurrence of stray voltage.
- The Safety section in Chapter 5 provides an expanded discussion regarding safety issues, particularly in the agricultural setting, related to transmission lines.
- Chapter 5 provides an expanded discussion of the impact of constructing new transmission lines through forests, including industrial forests. Chapters 7, 8, 9, and 11 include discussion identifying larger blocks of industrial forests impacted by the various route alternatives.

Incorrect Information/Incomplete Data/EIS Format: Comments stating concerns that the information provided within the EIS was incorrect. Comments regarding the organization, and format of the EIS.

- As stated previously, significant changes to formatting of the EIS have been made. Some of the more obvious changes include: Chapters 3 and 4 from the draft EIS were switched in this final EIS to provide a more natural progression of the topic discussions. The Table of Contents, the List of Tables, and the List of Figures in Volume 1 have been revamped entirely to be more understandable and useful. Each page of the text now includes a footer that identifies the chapter.
- Throughout the EIS, many typographical and grammatical corrections were made in response to specific errors mentioned in the comments. In addition, technical errors or otherwise incorrect information was corrected.

Project Design/Construction Impacts/Cost Estimates: Comments related to the physical design of the proposed project (i.e. structure heights, ROW requirements, foundation sizes). Comments related to potential environmental impacts during construction, and related mitigation measures. Comments regarding the basis for the cost estimates for the project, such as the underlying assumptions. Comments regarding the proposal to use a fiber optic ground wire system for control and operation of the electric transmission line project and the potential for other commercial uses by the applicants.

- Chapter 6 provides an expanded discussion of expected construction and environmental mitigation techniques that may be used for the proposed project. The discussion relies upon information gathered from Wisconsin Electric Power Company (WEPCO) and from the applicants regarding a transmission line construction project recently completed in the Upper Peninsula of Michigan (the Central UP project). Volume 2 includes photographs, taken during construction of the Central UP project, that provide an example of the construction techniques and environmental mitigation measures used on that project.

- Chapter 6 also includes additional discussion regarding the cost estimates for this project, including costs estimates for the two new routes, Tripoli 4 and Owen 4. In addition, information regarding potential cost overruns, relative to original forecasted costs, based on recently constructed transmission line projects has been provided. The additional information regarding cost overruns from recent projects is also referred to in the analysis provided in Chapter 4.
- Chapter 6 includes an expanded discussion of the applicants' proposal to install a fiber optic shield wire as part of the project.

Need for the Proposed Project: Comments regarding the analysis of whether the project is needed from a reliability perspective, a commercial perspective, or both. Comments included concerns about the assumptions upon which the analysis is based and the independent objectivity of the analysis.

- Chapter 2 has been updated to reflect more recent information regarding forecasted demand for electricity in Wisconsin, and the region, as well as updated information regarding utilities' plans to meet the demand for electricity.
- The new Chapter 3 (formerly Chapter 4) includes an expanded discussion of the impact of recent developments regarding the Chisago-Apple River transmission line.

Property Values: Comments regarding adverse impacts on property values due to construction of the electric transmission line on or near private property.

- Chapter 5 includes an expanded discussion of studies that have been conducted regarding the impact of electric transmission lines on property values. This expanded discussion provides additional references to the actual studies reviewed and takes into consideration more recent studies on the issue.

PSCW Processes: Comments regarding the timetable for Commission staff's analysis. Comments regarding PSCW processes for allowing public input into the analysis. Comments regarding the Commission's and Commission staff's objectivity and independence.

- Additional references to sources of information relied upon by Commission staff have been identified within the EIS to better allow others the opportunity to independently obtain and review source information.

ROW Maintenance Practices: Comments regarding the utilities' rights to access ROW for maintenance, restrictions on property owners use of the ROW, and the utilities' use of herbicides for maintenance of ROW, particularly near naturally occurring water sources.

- Chapter 5 provides information regarding ROW maintenance practices. A list of landowners' rights during and after transmission line construction, based on state statues, has been added to Chapter 5.

Reliability Impact to Residents in the Project Area: Comments related to whether the proposed project would enhance the reliability of service to residents in the project area.

- Chapter 4 includes additional discussion of the potential reliability impact of the proposed project on northwestern and northern Wisconsin.

Stray Voltage / Ground Currents: Comments regarding concerns for potential increases in stray voltage or induced ground currents, and related impacts on agricultural livestock, wildlife and humans.

- Chapter 5 includes an expanded discussion of stray voltage. In particular the expanded discussion addresses the relationship of transmission lines, distribution lines, and the occurrence of stray voltage.

Transmission System Alternatives: Comments regarding the analysis of transmission system alternatives to the proposed project. In particular, comments regarding the relative electrical performance of the various transmission system alternatives and the relative risk of environmental impact of the various transmission system alternatives.

- The new Chapter 3 (formerly Chapter 4) includes a revised discussion of transmission system alternatives identified in the draft EIS.
- Chapter 4 includes an analysis of whether a package of other, generally smaller scale, transmission improvement projects would be useful in meeting, or partially meeting the future demand for electricity in Wisconsin. In particular, the new discussion provides an analysis of the impact on transmission transfer capability available through transmission system improvements identified by Wisconsin utilities and cooperatives for the Strategic Energy Assessment (SEA).

UW-Stevens Point - Treehaven Facility: Comments regarding the impact of proposed routes through the Treehaven facility, such as direct environmental impacts and impacts on the continuing viability of the Treehaven property as a teaching and conference facility.

- Chapter 11 provides additional information about the UW-Stevens Point - Treehaven facility, and the potential impact on the facility if a new transmission line is installed through the Treehaven property.

Use of Existing Corridors / Use of Public Lands: Comments regarding impacts of using existing corridors, and potential opportunities for use of existing corridors. Comments regarding potential use of publicly owned lands, and impacts of using publicly owned lands for utility purposes.

- Chapter 6 includes a new discussion clarifying "corridor sharing" options under consideration within this project and briefly addresses some of the pros and cons of corridor sharing.

- Chapter 7 also contains a brief discussion about using public lands for utility purposes.

Wetland Impacts: Comments regarding impacts of constructing the proposed line through wetlands, as well as near or over open bodies of water.

- Chapter 6 provides an expanded discussion of environmental impacts associated with construction of an electric transmission line through wetlands. Included in this discussion are issues related to construction techniques and mitigation measures and wetland conservation programs.
- Chapter 5 discussion of wetlands (under Water Resources) has been expanded to include wetland conservation programs and information about damage to specific wetland types.

Wildlife Impacts: Comments regarding impacts to wildlife as a result of constructing the proposed transmission line, including elimination of habitat and breeding grounds, and encroachment of edge species.

- Chapter 5 provides additional information regarding the impact of forest fragmentation on local ecosystems.

Individuals that submitted comments

The following table summarizes the comments received from the public. The information provided is sorted alphabetically by last name. After each name is a listing of the topics discussed in the written comments.

Last Name	First Name	Topics Discussed
Acker	James	Need for the proposed project, aesthetic/tourism impact, endangered/threatened resource, conservation/demand side management, generation alternatives
Barakat	Edith and Farouk	Need for the proposed project
Barber	Terry	Property values, eminent domain/property rights/local zoning, stray voltage/ ground currents, aesthetic/tourism impact, human health impact, wildlife impacts
Bargender	Sally	Impact on agricultural, business operations, wildlife impacts
Barile	Rebecca	Wetland impacts, generation alternatives, aesthetic/tourism impacts, forest impacts, wildlife impacts
Becker	Robert J.	Use of existing corridors/use of public lands, forest impacts, impact on agricultural/business operations, eminent domain/property rights/local zoning, generation outside of Wisconsin, generation alternatives
Berens	Jean	PSCW processes, eminent domain/property rights/local zoning, use of existing corridors/use of public lands
Berg	Russell	Line design, construction impacts/cost estimates, fiber optics
Bevard	Penny	Human health impact, forest impacts
Beyerl	Debora	Stray voltage/ground currents, wildlife impacts
Bloedow	Mary	Need for the proposed project, generation alternatives, aesthetic/tourism impact
Boening	Donald	Wildlife impacts, forest impacts, ROW maintenance practices

Last Name	First Name	Topics Discussed
Boettcher	Jeff	Stray voltage/ground currents, generation outside of Wisconsin
Boylan	Marshall	Stray voltage/ground currents, need for the proposed project
Bragg	Elaine	Impact on agricultural/business operations, human health impact, property values, aesthetic/tourism impact
Braski	Marcella	Endangered/threatened resources, historic sites/proximity to schools/route recommendation
Brusky	James	Forest impacts, UW-Treehaven facility, wetland impacts, aesthetic/tourism impact
Buchberger	Claude and Margaret	Need for the proposed project, generation alternatives, wildlife impacts, impact on agricultural/business operations, eminent domain/property rights/local zoning
Bulin	Elgin	Aesthetic/tourism impact
Carlstrom	Carol	Property values, impact on agricultural/business operations
Churchill	Mary Ann	Reliability impact to residents in the project area
Cicha	Dan	Use of existing corridors/use of public lands
Coffield	John	PSCW processes, eminent domain/property rights/local zoning, human health impact, property values
Cooper	Judy	Property values, PSCW processes, human health impact
Crisler	Carole	PSCW processes, property values
Daul	Richard	Impact on agricultural/business operations, human health impact
Davey	Richard and Patricia	Endangered/threatened resources, wetland impacts, impact on agricultural/ business operations, human health impact
Demmerly	Karen and Dan	Aesthetic/tourism impact, incorrect/incomplete data/EIS format, UW-Stevens Point - Treehaven facility, property values, historic sites/proximity to schools/ route recommendation, PSCW processes, human health impact, generation alternatives, forest impacts
Drabek	Charlene and Scott	Human health impact, property values, need for the proposed project
Drewek	Darlene	Human health impact, aesthetic/tourism impact
Farmer	Irene	Historic sites/proximity to schools/route recommendation
Farrow	John	Generation alternatives, environmental impacts of distributed generation
Ferraro	David and Lynette	Human health impact, property values
Fields	Douglas	Endangered/threatened resources, ROW maintenance practices, forest impacts, wetland impacts
Fink	Lawrence	Impact on agricultural/business operations, generation alternatives
Fiser	David	Impact on agricultural/business operations
Flora	Ruth	Incorrect information/incomplete data/EIS format
Fuhlman	Phil	Need for the proposed project, eminent domain/property rights/local zoning, use of existing corridors/use of public lands, generation outside of Wisconsin, line design/construction impacts/cost estimates, fiber optics, incorrect information/incomplete data/EIS format, conservation/demand side management, generation alternatives
Geisler	Scott	Eminent domain/property rights/local zoning, aesthetic/tourism impact, human health impact, wildlife impacts
Getschman	Dorothy	Need for the proposed project, PSCW processes
Gladwin	Harry and Nancy	Aesthetic/tourism impact, generation alternatives, endangered/threatened resources, use of existing corridors/use of public lands
Godfrey	Elizabeth	Aesthetic/tourism impact
Goulet	Daniel V.	Aesthetic/tourism impact

Last Name	First Name	Topics Discussed
Guralski	Pearl	Human health impact, impact on agricultural/business operations, stray voltage/ ground currents
Hall	Brian	Wildlife impacts, aesthetic/tourism impact
Hannemann	Arlene	Need for the proposed project, generation outside of Wisconsin, eminent domain/property rights/local zoning, transmission system alternatives
Hannemann	David and Christene	Need for the proposed project, generation outside of Wisconsin, eminent domain /property rights/local zoning, transmission system alternatives, human health impact, PSCW processes
Hannemann	James and Rhonda	Need for the proposed project, transmission system alternatives, use of existing corridors/use of public lands, generation outside of Wisconsin
Hannemann	Jane	Need for the proposed project, generation outside of Wisconsin, eminent domain /property rights/local zoning, transmission system alternatives
Hannemann	Walter	Need for the proposed project, generation outside of Wisconsin, eminent domain /property rights/local zoning, transmission system alternatives
Harper	James G.	Eminent domain/property rights/local zoning, wetland impacts, impact on agricultural/business operations
Heckendorf	Bob and Sue	Impact on agricultural/business operations, ROW maintenance practices, PSCW processes, eminent domain/property rights/local zoning, line design/construction impacts/cost estimates, fiber optics, incorrect information/incomplete data/EIS format
Heffernan	Robert	Need for the proposed project
Hegge	Don and Dixie	Need for the proposed project, aesthetic/tourism impact
Hendzel	Ed	Stray voltage/ground currents, generation alternatives
Hoffman	Irene	Wildlife impacts, human health impact
Hoogland	Jerome and Lois	Impact on agricultural/business operations
Huhtala	Alice M.	Wildlife impacts, property values, line design/construction impacts/cost estimates, fiber optics
Jakobi	Gary and Barbara	Eminent domain/property rights/local zoning, PSCW processes, generation alternatives, aesthetic/tourism impact, use of existing corridors/use of public lands
Johanesen	Craig L.	Use of existing corridors/use of public lands, need for the proposed project, generation outside of Wisconsin
Johnson	Clarence	Stray voltage/ground currents, property values, wetland impacts, wildlife impacts, ROW maintenance practices
Johnson	Karen	Human health impact, line design/construction impacts/cost estimates, fiber optics, eminent domain/property rights/local zoning
Johnson	Lois	PSCW processes/wetland impacts/forest impacts/stray voltage/ground currents impact on agricultural/business operations
Johnson	Terrence	Need for the proposed project, generation outside of Wisconsin, generation alternatives, endangered/threatened resources, use of existing corridors/use of public lands
Kempcke	Art	Aesthetic/tourism impact
Kolbe	Delmar	Eminent domain/property rights/local zoning
Koth	Robert A.	Historic sites/proximity to schools/route recommendation
Kreager	Tom	Transmission system alternatives, need for the proposed project, generation outside of Wisconsin, line design/construction impacts/cost estimates, fiber optics, generation alternatives, wildlife impacts, wetland impacts, forest impacts
Kuhner	Joel W.	Endangered/threatened resources
Laajala	Gene and Mary Ann	Incorrect/incomplete data/EIS format, property values

Last Name	First Name	Topics Discussed
Lang	Theresa	Eminent domain/property rights/local zoning, aesthetic/tourism impact, wildlife impacts, endangered/threatened resources, generation alternatives, PSCW processes
Leet	Roy J.	Use of existing corridors/use of public lands, forest impacts, endangered/threatened resources, aesthetic/tourism impact
Liebaert	Mark	Eminent domain/property rights/local zoning, incorrect/incomplete data/EIS format, ROW maintenance practices
Lunde	Ivar and Nanette	Aesthetic/tourism impact, wetland impacts
Lyon	Sandy	Property values, aesthetic/tourism impact, historic sites/proximity to schools/route recommendation, eminent domain/property rights/local zoning
Maas	Jeffry M.	Need for the proposed project, reliability impact to residents in the project area
Mabie	Sherburn	Conservation/demand side management, generation alternatives
Mabie	Virginia	Impact on agricultural/business operations, property values, generation outside of Wisconsin, conservation/demand side management, generation alternatives, human health impact
Macholl	Anna J.	PSCW processes, impact on agricultural/business operations, endangered/threatened resources, incorrect/incomplete data/EIS format, ROW maintenance practices, eminent domain/property rights/local zoning
Martin	William J.	Generation outside of Wisconsin, wetland impacts, property values
Martinson	Ernest	Generation alternatives, deregulation/American Transmission Company
McDonald	Ardys	Generation alternatives, historic sites/proximity to schools/route recommendation
Melander	Joanne and Donald	Stray voltage/ground currents, property values, generation alternatives
Merten	Charles	Incorrect/incomplete data/EIS format, transmission system alternatives, deregulation/American Transmission Company
Michaud	Henry and Andrea	UW-Stevens Point - Treehaven facility, aesthetic/tourism impact
Moody	Dean and Ramona	Eminent domain/property rights/local zoning
Moon	Bill and Gemma	Eminent domain/property rights/local zoning, human health impact
Nelson	Loren	Human health impact, property values
Nielsen	Geneva	PSCW processes, property values
Noel	Jack	Human health impact, generation alternatives
Oresnik	Frank	PSCW processes, need for the proposed project, line design/construction impacts/cost estimates, fiber optics, deregulation/American Transmission Company, generation alternatives
Pavlovich	Frank and Marge	Generation alternatives, human health impact, wildlife impacts, eminent domain /property rights/local zoning
Phillips	Victor	UW-Stevens Point – Treehaven facility, forest impacts, endangered/threatened resources, wetlands, EMF and other human health issues, transmission system alternatives aesthetic/tourism impacts
Pietenpol	Neil and Carol	Aesthetic/tourism impact, property values
Pinkston	Judy	Deregulation/American Transmission Company, need for the proposed project
Powell	Mariann Cherry	Endangered/threatened resources, incorrect/incomplete data/EIS format, wildlife impacts, aesthetic/tourism impact
Quigley	Dr. Dayle	PSCW processes, human health impact, aesthetic/tourism impact, property values
Quinnell	Paul and Beverly	Human health impact, stray voltage/ground currents, impact on agricultural/business operations, aesthetic/tourism impact, property values, eminent domain/property rights/local zoning
Rampier	Robert	Endangered/threatened resources

Last Name	First Name	Topics Discussed
Raunio	Darlene and Larry	Incorrect/incomplete data/EIS format, endangered/threatened resources, forest impacts, line design/construction impacts/cost estimates, fiber optics, human health impact, conservation/demand side management, generation outside of Wisconsin, PSCW processes
Reitz	Roxanna	Endangered/threatened resources
Ringstad	Eric	Generation outside of Wisconsin
Rohrman	Bernard	Generation alternatives
Rollman	James C.	Wetland impacts, UW-Stevens Point - Treehaven facility, historic sites/proximity to schools/route recommendation
Rombach	Nicholas	Wildlife impacts
Ronchi	Cloyetta	Need for the proposed project, eminent domain/property rights/local zoning, line design/construction impacts/cost estimates, fiber optics, generation alternatives
Rowney	Wm., Fern, Janet	Need for the proposed project, impact on agricultural/business operations
Rudack	Joel W.	Aesthetic/tourism impact
Sanderson	Audrey and Larry	Forest impacts, use of existing corridors/use of public lands
Schewe	John T.	PSCW processes
Schmeling	Darcy	Aesthetic/tourism impact
Scoles	Joyce	Property values, human health impact
Scoles	Russell	Reliability impact to residents in the project area
Serley	James E.	Need for the proposed project, PSCW processes, transmission system alternatives, generation outside of Wisconsin, deregulation/American Transmission Company
Shimko	Martin	Use of existing corridors/use of public lands, historic sites/proximity to schools/route recommendation, eminent domain/property rights/local zoning
Shirk	Melvin and Pauline	Stray voltage/ground currents
Smith	Diana C.	PSCW processes
Socha	Betty J.	Need for the proposed project, generation outside of Wisconsin, transmission system alternatives, PSCW processes
Soukup	Al	Aesthetic/tourism impact
Spotts	Richard	Generation outside of Wisconsin, reliability impact to residents in the project area, generation alternatives, conservation/demand side management
Sprotte	Dorothy	Human health impact, property values, aesthetic/tourism impact
Stark	Gregory	Impact on agricultural/business operations
Stark	Harvey	Stray voltage/ground currents, aesthetic/tourism impact
Steffen	Eleanor	Line design/construction impacts/cost estimates, fiber optics, PSCW processes, endangered/threatened resources
Steffen	Roger	Impact on agricultural/business operations, forest impacts, need for the proposed project, line design/construction impacts/cost estimates, fiber optics, generation outside of Wisconsin, endangered/threatened resources
Steventon	Seth	Human health impact
Stoll	Linus	Need for the proposed project
Stremer	Annette	Impact on agricultural/business operations, stray voltage/ground currents, human health impact
Svanda	Fred	Impact on agricultural/business operations, use of existing corridors/use of public lands
Tazelaar	Janice E.	Incorrect/incomplete data/EIS format, need for the proposed project, ROW maintenance practices, conservation/demand side management, historic

Last Name	First Name	Topics Discussed
		sites/proximity to schools/route recommendation
Tennis	Linda	Property values, eminent domain/property rights/local zoning, aesthetic/tourism impact, stray voltage/ground currents
Thayer	Al and Gordon	Reliability impact to residents in the project area, aesthetic/tourism impact, property values
Thornton	Paul	Endangered/threatened resources, wildlife impacts, aesthetic/tourism impact
Tomandl	Deb	ROW maintenance practices, generation alternatives, conservation/demand side management, PSCW processes
Vacho	Mark	Property values, human health impact
Vacho	Steve	Reliability impact to residents in the project area, impact on agricultural/business operations, eminent domain/property rights/local zoning
Vallier	Dorothy	UW-Stevens Point – Treehaven facility
VanderLoop	Sr. Mary John	Generation alternatives
Van Gilder	James and Bonnie	Property values, aesthetic/tourism impact, wildlife impacts
Verdegan	Gene R.	PSCW processes
Verdegan	Margaret	PSCW processes, property values
Wallace	Caroline	PSCW processes, stray voltage/ground currents
Ward	Carey	Human health impact, eminent domain/property rights/local zoning
Wasko	Maryann	Human health impact, property values
Wengeler	William	Use of existing corridors/use of public lands, incorrect/incomplete data/EIS format, generation alternatives
Wentzel	Richard	Endangered/threatened resources, wildlife impacts
Wilke	DuWayne and Mary	Property values, wildlife impacts, human health impact, aesthetic/tourism impact
Willers	Jeffry M.	Wildlife impacts, use of existing corridors/use of public lands
Willging	Bob	Need for the proposed project, conservation/demand side management, line design/construction impacts/cost estimates, fiber optics, aesthetic/tourism impact
Wincentsen	Judy	Use of existing corridors/use of public lands, aesthetic/tourism impact
Witucki	Donald	Human health impact/generation outside of Wisconsin
Witucki	Terry	Deregulation/American Transmission Company, need for the proposed project, stray voltage/ground currents, impact on agricultural/business operations
Wolf	Colette S.	Need for the proposed project, generation outside of Wisconsin, incorrect/incomplete data/EIS format
Wollemann	Sylvia	Historic sites/proximity to schools/route recommendation, endangered/threatened resources, forest impacts
Woods	Paul	Use of existing corridors/use of public lands, property values
Zietlow	Henry J.	Need for the proposed project
Zipp	Phil	Use of existing corridors/use of public lands